



Advanced Disposal

January 29, 2016

Mr. Eric Jones
Air Compliance Section
IEPA – Bureau of Air
1021 North Grand Avenue East
Springfield, IL 62702

**RE: Advanced Disposal Services (ADS) Zion Landfill #097200AAV
CAAPP Permit No. 97030064
Semi-Annual NSPS Report for the Period July 1 – December 31, 2015**

Dear Mr. Jones:

The Advanced Disposal Services Zion Landfill in Zion, Illinois is subject to the New Source Performance Standards for Municipal Solid Waste Landfills, 40 CFR Part 60 Subpart WWW.

The facility is required by 40 CFR 60.757(f) and CAAPP Permit Condition 4.1.5.b.i.C.III to submit a semi-annual report of the exceedances from monitored parameters. A responsible official certification for submittal of the report is attached, in accordance with the requirements of CAAPP Permit Condition 3.6.b.ii.

Sincerely,
Advanced Disposal Services Zion Landfill

James A. Lewis
General Manager

Cc: Tim Curry, Advanced Disposal Services (e-copy)
Randy Frank, Advanced Disposal Services (e-copy)
Kari Rabideau, Advanced Disposal Services (e-copy)

Enclosure: As Noted

**701 Green Bay Road • Zion, IL 60099
tel (847) 623-3870 • fax (847) 746-0666 • www.AdvancedDisposal.com**

Certification for the NSPS Semiannual Report
Advanced Disposal Services - Zion Landfill
Zion, Illinois
July 1, 2015 – December 31, 2015

I CERTIFY UNDER PENALTY OF LAW THAT, BASED ON INFORMATION AND BELIEF FORMED AFTER REASONABLE INQUIRY, THE STATEMENTS AND INFORMATION CONTAINED IN THIS APPLICATION ARE TRUE, ACCURATE AND COMPLETE. ANY PERSON WHO KNOWINGLY MAKES A FALSE, FICTITIOUS, OR FRAUDULENT MATERIAL STATEMENT, ORALLY OR IN WRITING TO THE ILLINOIS EPA COMMITS A CLASS 4 FELONY. A SECOND OR SUBSEQUENT OFFENSE AFTER CONVICTION IS A CLASS 3 FELONY. (415 ILCS 5/44(H))

Signature: James A. Lewis

Name: James A. Lewis

Official Title: General Manager

Telephone No.: (847) 599-5910

Date Signed: 1/29/16

**Advanced Disposal Services
Zion Landfill
NSPS SEMI-ANNUAL REPORT**

**For the Reporting Period
07/01/15 – 12/31/15**

**Advanced Disposal Services Zion Landfill, Inc.
Zion, IL**

1.0 Introduction

This semi-annual report has been prepared in accordance with 40 CFR 60.757(f) for the Advanced Disposal Services Zion Landfill in Zion, IL. This report covers the period of gas system operations from July 1, 2015 through December 31, 2015.

Documented in this report are exceedances of monitored parameters under 40 CFR 60.756, periods of downtime for gas collection/control devices and any expansions/modifications to the gas collection system during the reporting period. The report is organized into three main sections: Collection Systems, Control Devices and Landfill.

The gas system in place at the site during the reporting period consisted of vertical gas extraction wells, horizontal trenches, connections to leachate cleanout risers and leachate recirculation lines, and associated header piping.

The gas mover equipment is comprised of multiple blowers to draw from separate areas of the landfill. Collected gas is sent to the gas-to-energy combustion units. The open candlestick and the enclosed flare are used for excess gas combustion, as well as for backup purposes, when the engines are down. The primary control device consists of five gas-to-energy combustion units in the adjacent gas-to-energy plant owned by EDI.

2.0 Collection System Summary

2.1 Exceedance of Monitored Parameters

Gauge Pressure at each Gas Collection Wellhead (40 CFR 60.756 (a)(1))

- Report all instances of positive pressure measured at the gas collection header of each individual wellhead, including value and length of time measured.
- Per 40 CFR 60.753 (b), record instances when positive pressure occurred at a wellhead in an effort to avoid a landfill fire.
- Detail action taken within 5 days to correct the exceedance. Report date that exceedance was corrected.

During this reporting period, there two wells (CEW7NE and EW143C) that exhibited positive pressure. Actions were taken within 5 days pressure was reduced within 15 days, as seen in Attachment 1. Pressure exceedances for those wells with Adjusted Standards are included in Attachment 2.

Monthly Oxygen or Nitrogen Concentration at Each Gas Collection Wellhead (40 CFR 60.753(c))

- Report all instances, on a per well basis, when nitrogen concentrations exceeded 20% or oxygen concentrations exceed 5%. Report date, value and length of time of each exceedance.
- Detail action taken within 5 days to correct the exceedance. Report date that exceedance was corrected.

Attachment 1 contains a list of the instances when oxygen concentrations equaled or exceeded 5% at the wellhead, as well as a list of the actions taken to correct them. Actions were taken within 5 days but there was one instance when the oxygen level was not brought below 5% within 15 days. All exceedances greater than 15 days that were not approved by adjusted standards or alternate timelines were reported to the IEPA as wellfield deviations in monthly CAAPP 405 form submittals. Measurements of oxygen greater than 5% for wells with Adjusted Standards are included separately in Attachment 2.

Temperature of the landfill gas at each wellhead (40 CFR 60.756(a)(3))

- Report all instances, on a per well basis, when landfill gas temperature exceeded 55°C (131°F).
- Detail action taken within 5 days to correct exceedance. Report date that exceedance was corrected.

During this reporting period, there were no instances when temperatures were measured above the limit of 131°F.

2.2 Record of Operation

Description and duration of all periods when the gas stream from the collection system was diverted from the control device through a bypass line (40 CFR 60.756(b)(2)) for enclosed flare, engines or turbines, or 40 CFR 60.756(c) for utility flares).

The gas collection system at Zion Landfill does not have a bypass line; therefore, there were no periods of time that flow was diverted through a bypass line.

Description and duration of all periods when the collection system was not operating for more than 5 days (40 CFR 60.757(f)(4)).

There was no period of time during which the collection system was not operating for more than 5 days during the reporting period.

2.3 Record of Expansion

Date and location of all newly installed wells or collection system expansion (40 CFR 60.757(f)(6)).

The following table summarizes wells that were added or removed from the NSPS well monitoring list during this period:

Date	Well (s)	Description
July 2015	EW190	Installed horizontal collector EW190
October 2015	EW104A	Installed EW104A to replace EW104
October 2015	EW142B	Installed EW142B to replace EW142A
October 2015	EW149A	Installed EW149A to replace EW149
October 2015	EW153	Installed New Well EW153
October 2015	EW154A	Installed EW154A to replace EW154
October 2015	EW155A	Installed EW155A to replace EW155

The wells were added as part of the normal gas system installation schedule pursuant to 40 CFR 60.755(b), and not as part of expansions required to address wellfield or surface scan exceedances pursuant to 40 CFR 60.755(a) or 60.755(c).

2.4 Adjusted Standard Requests

In accordance with the USEPA approval of adjusted standards for certain wells: "The monthly monitoring required by 40 CFR 60 Subpart WWW will be conducted for these locations, but positive pressure or elevated oxygen concentrations will not be considered as exceedances of the operating limit...however, the monthly monitoring results must be reported to the IEPA. The reports shall note if and when the extraction points are shut off in accordance with this letter."

Attachment 2 contains a summary of the monthly monitoring results for the current reporting period, for wells which have been granted adjusted standards.

3.0 Control Device Summary

3.1 Monitored Parameters

Flare Flame Detection (open flare only)

- *Report all periods of flare flame absence (40 CFR 60.758(b)(4))*

There was no recorded flare flame absence during the reporting period while the open flare was in operation.

Combustion Temperature (enclosed flare only)

- Report all periods during which the average combustion temperature was more than 28°C (50°F) below the temperature established during the most recent performance test, for more than 3 hours (40 CFR 60.758(c)(1)(i)).

There were NO periods when the enclosed flare was operating for more than 3 hours below 1480°F which is 28°C (50°F) below the temperature established in the 12/2007 performance test (1530°F).

Flow

- Report all periods during which the control device was not operating for more than one hour; report duration of each event (40 CFR 60.757(f)(3)).

Due to power loss at the site or blower maintenance, there multiple instances when the gas system control devices (both flares and all engines) did not operate for more than one hour. A summary is below. CAAPP 405 Deviation reports were submitted, as required.

CONTROL SYSTEM- Downtime

Date	Duration	Reason	Corrective Action	CAAPP 405 Deviation Submitted?
8/2/15	22:04 – 23:48 (1 hr 44 min)	Loss of Mains. Missing Data	There was no corrective action required since the site cannot control intermittent power failures.	September 30, 2015
9/3/15-	8:00 – 10:20 (2 hr 20 min)	Scheduled Maintenance	N/A- Scheduled maintenance is required to keep the gas system functioning properly.	October 26, 2015
9/16/15	6:55 – 9:45 (2 hr 50 min)	Scheduled Maintenance	N/A- Scheduled maintenance is required to keep the gas system functioning properly.	
10/15/2015	14:25 – 16:05 (1 hr 40 min)	Scheduled Maintenance	N/A- Scheduled maintenance is required to keep the gas system functioning properly.	November 27, 2015
11/11/2015	13:32 – 15:32 (2 hrs)	Scheduled Maintenance	N/A- Scheduled maintenance is required to keep the gas system functioning properly.	December 22, 2015

Flare Data Recorder

ENCLOSED FLARE- This permit condition requires the facility to monitor and record enclosed flare temperatures continuously and to monitor and record the flare flow every 15 minutes. The enclosed flare at the facility is equipped with temperature and flow recorders. Instances of missing flow data during the reporting period are included below. This instance was previously submitted to the IEPA in a monthly CAAPP 405 report.

ENCLOSED Flare Unit – Erroneous/ Missing Data

Start Time	End Time	Duration	Cause of Incident and Corrective Actions Taken	Subsequent Actions to Prevent Future Incidents	CAAPP405 Report Date
9/4/15 10:44	9/4/15 11:12	0 hr 28 min	Missing data. The data loss occurred when the data was downloaded from the hard drive to a compact flash drive for the month. At this time, the cause of the data gap unknown, however, one possibility is that the flash drive used to download the data may have developed a defect.	A new flash drive will be ordered and if the problem happens again, the drive will be replaced.	10/26/2015

OPEN FLARE- This permit condition requires the facility to install and maintain a heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame, and to monitor and record the flare flow every 15 minutes.

- The open flare at the facility is equipped with a flare scanner and thermocouple to continually check for flame. The flare automatically turns off if flare presence is not detected.
- The open flare at the facility is equipped with an electronic temperature and flow recorder. Instances of missing flow data during the reporting period are included below. These instances have been previously submitted to the IEPA in a monthly CAAPP 405 reports, as noted.

OPEN CANDLESTICK Flare Unit –Erroneous/ Missing Data

Start Time	End Time	Duration	Cause of Incident and Corrective Actions Taken	Subsequent Actions to Prevent Future Incidents	CAAPP405 Report Date
10/19/2015 17:20	10/20/2015 12:16	18 hrs 56 min	Missing Data. Power was turned off to make a repair to an electrical line that was hit on the north side	N/A- The site needs to shut off power for certain repairs. The flare was not operating during this time.	11/27/15
11/11/2015	11/30/2015	Multiple intermittent times between 11/11/2015 and 11/30/2015.	Erroneous Data. Moisture on probe was causing erratic readings when the flare was not running.	Continue to monitor data and make repairs/ adjustments, as needed.	12/22/15
12/1/15 14:20	12/1/15 14:48	28 min	Missing Data. Power to the flow meter was disconnected to perform install a new a block heater.	N/A- The site needs to shut off power for certain repairs. The flare was not operating during this time.	1/29/2016
12/12/15 8:44	12/12/15 15:32	7 hr 48 min	Missing Data. Power to the flow meter was disconnected to install new high voltage service related to cell 9 construction.	N/A- The site needs to shut off power for certain repairs. The flare was not operating during this time.	1/29/2016
12/1/15 0:00	12/29/15 23:59	Multiple intermittent times	Moisture on probe was causing erratic readings when the flare was not running.	Continue to monitor data and make repairs/adjustments, as needed.	1/29/2015

4.0 Landfill Summary

4.1 Monitored Parameters

4.1.1 Surface Scan (35 IAC 220.240 (c)(1)).

- Report the location of each exceedance of the 500-ppm methane concentration, and the concentration recorded at each exceedance location (40 CFR 60.757(f)(5)).

Quarterly surface scans were conducted in accordance with 35 IAC 220.240 (c)(1) on the following dates:

Dates	Landfill Area	Results
3Q- September 9, 2015	Site 1 (Phase A&B) and Old Site 2	No exceedances were detected
3Q- July 31, 2015	Site 2- Cells 1-8	No exceedances were detected
4Q- October 16, 2015	Site 2- Cells 1-8	No exceedances were detected
4Q- October 30, 2015	Site 1(Phase A&B) and Old Site 2	No exceedances were detected

Attachment 1
Wellfield Exceedances – July - December, 2015

Well ID	Date/Time	CH4 (%)	CO2 (%)	O2 (%)	Balance (%)	Temp.	Well Pres. (in. H2O)	Comments	Duration of Exceedance	Action	CAAPP405 Date(s)
ZIONEW10	7/14/2015 13:16	50.2	25.1	4.5	20.2	81	-72.3	No Change.....	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW10	8/11/2015 16:46	41	19.5	7.4	32.1	85	-46.9	Closed valve 1/2 turn or less.....			
ZIONEW10	8/11/2015 16:47	38.9	18.5	8.1	34.5	86	-22.9	Second readings.....			
ZIONEW10	8/14/2015 15:08	37.1	17.8	3.5	41.6	94	-65.8	4	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW10	9/14/2015 15:24	56.7	27.9	3.1	12.3	82	-32.8	No Change.....			
ZIONEW10	10/6/2015 14:48	44.5	21	7.1	27.4	81	-30.5	Closed valve 1/2 to 1 turn.....			
ZIONEW10	10/6/2015 14:48	44.7	22.2	6.8	26.3	82	-10.7	Second readings.....			
ZIONEW10	10/10/2015 16:40	45.5	23.4	6.3	24.8	66	-4.8	.....		
ZIONEW10	10/10/2015 16:41	56.8	27.9	3.3	12	67	-36.7	.....		
ZIONEW10	10/10/2015 16:41	56.8	27.9	3.3	12	67	-36.7	6	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW10	11/9/2015 14:55	55	27.2	4.4	13.4	61	-55.8	No Change.....			
ZIONEW10	12/15/2015 16:02	39.2	20.4	8.2	32.2	41	-72.7	Closed valve more than 1 turn.....			
ZIONEW10	12/15/2015 16:03	37.6	19.9	8.6	33.9	41	-57.1	Second readings.....			
ZIONEW10	12/18/2015 15:56	32.4	16.3	10.6	40.7	31	-62.6	.....		
ZIONEW10	12/21/2015 10:03	66.6	33.3	0	0.1	45	-1.1	Valve 100% open.....	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIOEW104	9/15/2015 13:19	59	38.4	0.7	1.9	89	-31.4	Valve 100% open.....			
ZIOEW104	10/7/2015 14:35	28.3	24.6	6.1	41	93	-17.8	Closed valve more than 1 turn.....			
ZIOEW104	10/7/2015 14:36	27.8	24.3	6.6	41.3	97	-1.6	Second readings.....			
ZIOEW104	10/10/2015 16:26	61.1	36.9	1.8	0.2	65	-4	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW13	8/11/2015 16:54	51.3	26	4.2	18.5	88	-77	No Change.....			
ZIONEW13	9/14/2015 15:30	34.8	19.3	9.1	36.8	93	-75.7	Closed valve more than 1 turn.....			
ZIONEW13	9/14/2015 15:31	35.7	19.4	8.8	36.1	93	-74.7	Second readings.....	4	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW13	9/17/2015 11:01	51.1	26.1	4.5	18.3	84	-67.2	.....		
ZIONEW13	9/17/2015 11:01	51.1	26.1	4.5	18.3	84	-67.2	4	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW13	10/6/2015 14:53	22.2	7.8	13.9	56.1	70	-75.4	Closed valve 1/2 turn or less.....			
ZIONEW13	10/6/2015 14:54	22.2	7.9	14	55.9	71	-57.8	Second readings.....			
ZIONEW13	10/10/2015 16:48	50.5	21.9	3.8	23.8	66	-64.3	.....		
ZIONEW13	10/10/2015 16:48	50.5	21.9	3.8	23.8	66	-64.3	4	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW13	10/10/2015 16:48	50.5	21.9	3.8	23.8	66	-64.3	.....		
ZIONEW13	10/10/2015 16:48	50.5	21.9	3.8	23.8	66	-64.3	.....		
ZIONEW13	10/10/2015 16:48	50.5	21.9	3.8	23.8	66	-64.3	.....		
ZIONEW13	11/9/2015 14:59	28.5	10.2	12.4	48.9	62	-71.1	Closed valve more than 1 turn.....	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW13	11/9/2015 15:05	27	9.6	13	50.4	68	0	Second readings.....			
ZIONEW13	11/13/2015 9:51	62.4	35.3	2.2	0.1	53	-15.1	No Change.....			
ZIONEW13	11/13/2015 9:51	62.4	35.3	2.2	0.1	53	-15.1	No Change.....	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW13	11/13/2015 9:51	62.4	35.3	2.2	0.1	53	-15.1	No Change.....			
ZIONEW13	11/13/2015 9:51	62.4	35.3	2.2	0.1	53	-15.1	No Change.....			
ZIONEW13	12/15/2015 16:07	14.1	3.5	17.4	65	48	58.4	Valve 100% closed.....	7	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW13	12/18/2015 15:51	65.6	33.7	0.6	0.1	37	-12.6	.....		
ZIOEW149	7/15/2015 16:48	59.6	39.1	0.6	0.7	86	-51.9	Valve 100% open.....	7	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIOEW149	8/13/2015 13:25	62.2	37.4	0.2	0.2	91	53.1	Valve 100% open.....			
ZIOEW149	8/14/2015 15:36	48.1	31.1	2.5	18.3	97	42.7	.....		
ZIOEW149	8/20/2015 9:13	60.7	37.8	1.1	0.4	75	-45.2	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW17	6/5/2015 10:32	69	30.7	0.2	0.1	62	-41.8	.....		
ZIONEW17	7/14/2015 12:17	38	20.4	7.9	33.7	77	-70.9	Closed valve 1/2 turn or less.....			
ZIONEW17	7/14/2015 12:18	39.3	20.2	8	32.5	76	-61	Second readings.....			
ZIONEW17	7/17/2015 10:01	14.2	5.1	4.8	75.9	77	-74.7			

Attachment 1
Wellfield Exceedances – July - December, 2015

ZIONEW17	8/11/2015 15:28	54.3	27.6	3.5	14.6	83	-72.1	No Change, Hand Valve slightly open,.....	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW17	9/14/2015 14:21	38.1	20.1	8.5	33.3	84	-75.1	Closed valve more than 1 turn,.....			
ZIONEW17	9/14/2015 14:22	37.5	19.7	8.7	34.1	85	-72.3	Second readings,.....			
ZIONEW17	9/17/2015 10:51	55.9	26.8	3.7	13.6	81	-74.5	4	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW17	9/17/2015 10:51	55.9	26.8	3.7	13.6	81	-74.5	.....		
ZIONEW17	10/6/2015 13:06	42.6	20.6	7.3	29.5	83	-65.3	Second readings,.....			
ZIONEW17	10/6/2015 13:06	41.8	20.1	7.4	30.7	83	-71.6	Closed valve 1/2 to 1 turn,.....	7	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW17	10/10/2015 16:51	68.2	30.7	0.9	0.2	70	-30.3	.....		
ZIONEW17	10/10/2015 16:52	68	31.6	0.2	0.2	69	-49.1	.....		
ZIONEW17	10/10/2015 16:52	68	31.6	0.2	0.2	69	-49.1	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW17	11/9/2015 14:02	43.8	21.8	7.1	27.3	64	-73.6	Closed valve more than 1 turn,.....			
ZIONEW17	11/9/2015 14:03	43.6	21.9	7.4	27.1	65	-72	Second readings,.....			
ZIONEW17	11/13/2015 10:00	0.8	0.5	21.9	76.8	47	-37.4	Closed valve 1/2 turn or less,.....	13	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW17	11/13/2015 10:00	0.8	0.5	21.9	76.8	47	-37.4	Closed valve 1/2 turn or less,.....			
ZIONEW17	11/16/2015 17:20	59.6	32	1.6	6.8	55	-34.2	.....		
ZIONEW17	11/16/2015 17:20	59.6	32	1.6	6.8	55	-34.2	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW17	12/15/2015 14:36	27.8	14.7	12.2	45.3	44	-59.6	Closed valve 1/2 turn or less,.....			
ZIONEW17	12/15/2015 14:38	29	15.5	12.1	43.4	44	-26.3	Second readings,.....			
ZIONEW17	12/18/2015 15:48	66.1	32.5	1.3	0.1	39	-15.8	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW19	9/14/2015 15:56	48.4	24.6	4.7	22.3	92	-74.7	No Change, Hand Valve slightly open,.....			
ZIONEW19	10/6/2015 12:55	43	21.2	7.2	28.6	73	-73.9	Closed valve more than 1 turn,.....			
ZIONEW19	10/6/2015 12:56	43	21.2	7.2	28.6	73	-73.9	Second readings,.....	4	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW19	10/10/2015 16:55	45.1	22.9	6.1	25.9	69	-74.3	.....		
ZIONEW19	10/10/2015 16:58	46.1	23.5	6.2	24.2	67	-73.6	.....		
ZIONEW19	10/10/2015 16:58	46.1	23.5	6.2	24.2	67	-73.6	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW19	10/19/2015 16:12	54	27	3.9	15.1	70	-74.6	.....		
ZIONEW20	8/11/2015 15:14	47.9	23.9	4.8	23.4	84	-72.9	No Change, Hand Valve slightly open,.....			
ZIONEW20	9/14/2015 15:51	34.5	18.8	9.2	37.5	91	-76.1	Closed valve more than 1 turn,.....	4	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW20	9/14/2015 15:52	37.9	20.5	8.5	33.1	91	-71.6	Second readings,.....			
ZIONEW20	9/17/2015 11:28	50.8	24.5	4.3	20.4	87	-72.8	.....		
ZIONEW20	9/17/2015 11:28	50.8	24.5	4.3	20.4	87	-72.8	4	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW20	10/6/2015 12:42	29.1	15.1	11.5	44.3	79	-61.8	Closed valve 1/2 to 1 turn,.....			
ZIONEW20	10/6/2015 12:42	29	14.8	11.4	44.8	80	-48.3	Second readings,.....			
ZIONEW20	10/10/2015 17:00	66.3	33	0.5	0.2	69	-43.9	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW20	10/10/2015 17:00	66.3	33	0.5	0.2	69	-43.9	.....		
ZIONEW22	8/11/2015 17:18	50.7	22.9	4.8	21.6	78	-76.4	No Change, Hand Valve slightly open,.....			
ZIONEW22	9/14/2015 16:13	38.9	20.2	8.2	32.7	90	-75.2	No Change, Hand Valve slightly open,.....	4	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW22	9/17/2015 10:46	52.5	25.9	4.4	17.2	81	-75.2	.....		
ZIONEW22	9/17/2015 10:46	52.5	25.9	4.4	17.2	81	-75.2	.....		
ZIONEW22	10/6/2015 15:29	35.7	17.8	9.6	36.9	76	-73.9	Closed valve 1/2 to 1 turn,.....	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW22	10/6/2015 15:30	37	18.4	9.5	35.1	77	-69.1	Second readings,.....			
ZIONEW22	10/10/2015 17:03	64.8	32	1.2	2	68	-74.3	.....		
ZIONEW22	10/10/2015 17:03	64.8	32	1.2	2	68	-74.3	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW22	11/9/2015 16:29	49.7	25.5	4.8	20	58	-73.3	No Change, Hand Valve slightly open,.....			
ZIONEW22	12/15/2015 17:16	34.7	19	9.5	36.8	41	-72	Closed valve 1/2 to 1 turn,.....			
ZIONEW22	12/15/2015 17:17	34.6	19.1	9.8	36.5	41	-66.2	Second readings,.....	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW22	12/18/2015 15:43	65.5	32.9	1.5	0.1	43	-39.7	.....		

Attachment 1
Wellfield Exceedances – July - December, 2015

ZIONEW26	6/2/2015 17:30	68.8	30.6	0.5	0.1	74	-1.3	No Change, Hand Valve slightly open,.....	15	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONEW26	7/14/2015 15:57	32.9	19.8	6.7	40.6	79	-75.3	Closed valve more than 1 turn,.....			
ZIONEW26	7/14/2015 15:58	32.9	19.9	6.7	40.5	79	-72.5	Second readings,.....			
ZIONEW26	7/17/2015 10:05	7.6	0.1	18.9	73.4	87	-39.7	.....		
ZIONEW26	7/21/2015 9:13	19.9	11	13.7	55.4	81	-74.2	.....		
ZIONEW26	7/24/2015 10:52	9.5	8.8	12.4	69.3	90	-73.7	.....		
ZIONEW26	7/27/2015 15:34	25	17.7	6.5	50.8	76	-75.2	.....		
ZIONEW26	7/29/2015 8:20	39.7	23	4.1	33.2	67	-65.6	No Change,.....	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIEW143C	11/11/2015 11:36	48.4	33.3	4	14.3	101	-16.1	No Change,.....			
ZIEW143C	12/21/2015 13:05	41.6	31.5	4.9	22	93	29	Opened valve 1/2 or less,.....			
ZIEW143C	12/24/2015 11:57	44.6	39	3.7	12.7	85	-17.2	20	Cell 1 sump malfunction caused elevated oxygen levels. Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%. Upon resolving the sump issues, the oxyegn levels subsided.	Jan-16
ZIOEWCD2	11/12/2015 11:52	60.1	39.7	0	0.2	46	-34.2	No Change,.....			
ZIOEWCD2	12/16/2015 15:50	0.1	0.4	21.8	77.7	51	-53.5	Closed valve 1/2 turn or less,.....			
ZIOEWCD2	12/16/2015 15:52	0.1	0.4	21.8	77.7	52	-47.6	Second readings,.....			
ZIOEWCD2	12/18/2015 16:29	0	1.5	21.3	77.2	27	-0.2	Opened valve 1/2 or less,.....			
ZIOEWCD2	12/21/2015 10:29	0.1	0.1	21.5	78.3	53	-59.4	Opened valve 1/2 or less,.....			
ZIOEWCD2	12/24/2015 11:43	0.1	0.5	21.7	77.7	40	-57.4	.....		
ZIOEWCD2	12/29/2015 11:11	0.1	1.4	20.7	77.8	30	-59.1	.....		
ZIOEWCD2	12/29/2015 11:12	0.1	1.4	20.9	77.6	31	-58.1	.....		
ZIOEWCD2	1/5/2016 13:32	56.9	37.4	1.5	4.2	65	-22.3	Opened valve 1/2 or less,.....			
ZIEW169A	11/11/2015 11:23	52	35.4	3.5	9.1	81	-1.7	No Change,.....	1	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIEW169A	12/17/2015 14:22	31.8	23.1	9	36.1	69	-0.1	No Change, Hand Valve slightly open,.....			
ZIEW169A	12/18/2015 16:45	59.3	40.6	0	0.1	58	-0.4	Second readings,.....			
ZICEW6NE	11/11/2015 13:37	59.7	39.4	0.7	0.2	63	-33	Valve 100% open,.....	5	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZICEW6NE	12/16/2015 17:14	2.1	2.5	20.8	74.6	43	-42	Closed valve more than 1 turn,.....			
ZICEW6NE	12/16/2015 17:16	1.7	1.7	20.9	75.7	42	-41.8	Second readings,.....			
ZICEW6NE	12/18/2015 16:16	0	0.1	22	77.9	29	-39.9	.....		
ZICEW6NE	12/21/2015 13:34	52	37.1	2.6	8.3	45	-0.2	No Change,.....			
ZICEW7NE	9/15/2015 13:48	47.1	37.4	1.4	14.1	94	-2	No Change,.....	83	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%. However, this well is located in a portion of waste that is <5 years old, and therefore is not yet subject to NSPS.	None
ZICEW7NE	10/7/2015 15:14	0.5	0.7	21	77.8	70	-0.2	No Change, Hand Valve slightly open,.....			
ZICEW7NE	10/10/2015 16:16	0.1	0.1	20.5	79.3	71	-5.1	.....		
ZICEW7NE	10/10/2015 16:17	0.2	0.1	20.6	79.1	71	-0.2	.....		
ZICEW7NE	10/10/2015 16:17	0.2	0.1	20.6	79.1	71	-0.2	.....		
ZICEW7NE	10/15/2015 7:41	0	0.1	20.4	79.5	48	0	No Change,.....			
ZICEW7NE	10/15/2015 7:43	0	0.1	20.4	79.5	48	-49.6	No Change,.....			
ZICEW7NE	10/19/2015 16:24	0	0	20.4	79.6	73	-0.6	.....		
ZICEW7NE	11/11/2015 13:33	0.6	1	20.6	77.8	63	-0.1	No Change, Hand Valve slightly open,.....			
ZICEW7NE	11/13/2015 9:39	1.2	1.4	21.7	75.7	40	-0.1	No Change, Hand Valve slightly open,.....			
ZICEW7NE	11/13/2015 9:39	1.2	1.4	21.7	75.7	40	-0.1	No Change, Hand Valve slightly open,.....			
ZICEW7NE	11/16/2015 17:14	0.1	0.5	20.3	79.1	54	-1.4	.....		
ZICEW7NE	12/16/2015 17:10	2.8	3.3	20.3	73.6	46	-0.2	No Change, Hand Valve slightly open,.....			
ZICEW7NE	12/18/2015 16:19	0.3	2.2	20.3	77.2	28	-0.2	.....		
ZICEW7NE	12/21/2015 13:28	15.3	13.4	13.1	58.2	48	0	No Change,.....			
ZICEW7NE	12/24/2015 11:34	0.9	3.6	17	78.5	38	-0.8	.....		
ZICEW7NE	12/29/2015 11:01	43.6	33.4	4.2	18.8	31	-4.8	.....		

Attachment 1
Wellfield Exceedances – July - December, 2015

ZIOCEW5S	7/30/2015 14:02	62.6	29.6	0.5	7.3	80	-48.2	Second readings,.....	2	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below	None
ZIOCEW5S	8/12/2015 16:11	30.4	19.9	6.5	43.2	92	-45.9	Valve 100% closed,.....			
ZIOCEW5S	8/14/2015 15:19	51.4	27.1	2	19.5	90	-3.2	9	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONHNW1	11/9/2015 17:23	49.5	33.5	2.9	14.1	49	-49.1	No Change,.....			
ZIONHNW1	12/15/2015 17:38	41.5	29	5.4	24.1	40	-49.4	Closed valve 1/2 turn or less,.....			
ZIONHNW1	12/15/2015 17:39	41.5	29.2	5.4	23.9	39	-49.4	Second readings,.....			
ZIONHNW1	12/18/2015 16:06	40.7	28.2	5.1	26	26	-45.9	.....		
ZIONHNW1	12/21/2015 11:14	43.9	18.3	10	27.8	58	-22.6	No Change,.....			
ZIONHNW1	12/24/2015 11:21	44.7	31.2	3.9	20.2	41	-46.9	9	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONHNW3	11/9/2015 17:25	47.6	34.3	1	17.1	49	-49.1	No Change,.....			
ZIONHNW3	12/15/2015 17:42	40.7	28.9	5.5	24.9	39	-49.6	Closed valve 1/2 turn or less,.....			
ZIONHNW3	12/15/2015 17:43	41.3	28.9	5.7	24.1	38	-49.1	Second readings,.....			
ZIONHNW3	12/18/2015 16:09	39.5	27.7	5.5	27.3	26	-47.1	.....		
ZIONHNW3	12/21/2015 11:19	38.4	28.3	5.6	27.7	56	0	No Change,.....			
ZIONHNW3	12/24/2015 11:28	43.1	30.7	4.5	21.7	39	-46.3	0	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONRSR8	8/11/2015 18:44	53.7	32.3	2.6	11.4	80	-58.4	No Change,.....			
ZIONRSR8	9/14/2015 17:42	23.4	22	7.2	47.4	85	-52.7	Closed valve more than 1 turn,.....			
ZIONRSR8	9/14/2015 17:43	23.8	22.1	7.1	47	85	-50.1	Second readings,.....			
ZIONRSR8	9/14/2015 17:58	49.3	31.1	3.4	16.2	82	-49.2	No Change,.....	13	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONRSR8	10/6/2015 16:55	38.7	30	3.6	27.7	75	-45.3	No Change,Hand Valve slightly open,.....			
ZIONRSR8	10/6/2015 17:10	1.6	1.1	20.8	76.5	65	-0.5	No Change,Hand Valve slightly open,.....			
ZIONRSR8	10/10/2015 16:08	2.7	1.9	19.6	75.8	69	-8.6	.....		
ZIONRSR8	10/10/2015 16:08	2.5	1.7	19.7	76.1	68	-0.6	.....		
ZIONRSR8	10/10/2015 16:08	2.7	1.9	19.6	75.8	69	-8.6	.....		
ZIONRSR8	10/19/2015 16:16	14.7	8	15.9	61.4	72	-9.1	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONRSR8	10/19/2015 16:18	56.5	33.3	3	7.2	73	-3.1	.....		
ZIONRSR7	8/11/2015 18:38	49.3	32.3	3.6	14.8	84	-55.2	No Change,.....			
ZIONRSR7	9/14/2015 17:52	28.3	23.5	6.1	42.1	77	-48.8	Closed valve more than 1 turn,.....			
ZIONRSR7	9/14/2015 17:53	28.1	23.3	6.1	42.5	78	-45.3	Second readings,.....	3	Multiple adjustments were been made to this extraction location and/or surrounding wells to attempt to bring the oxygen concentrations below 5%.	None
ZIONRSR7	9/17/2015 11:11	58.9	35.9	2.2	3	84	-9.7	.....		

Zion Landfill- NSPS Semi-Annual Report

Attachment 2

Monitoring Results for Wells with Approved Adjusted Standards-- July - December, 2015

Monitoring Point	Date / Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Balance (%)	Temperature (F)	Adjusted Static Pressure ("H ₂ O)	Cause/ Corrective Action	Well Shut Off?	Status
				OVER 5%			POS. PRESSURE			
ZIONEW01	7/14/2015 16:16	0.4	0.4	19.7	79.5	79	0.0	Valve 100% closed.....	y	An adjusted standard request for pressure and oxygen was approved by the USEPA on 4/4/08.
ZIONEW01	8/11/2015 17:49	66.8	27.1	2.4	3.7	85	0.0	Valve 100% closed.....	y	
ZIONEW01	9/14/2015 16:45	46.6	20.4	6.5	27.5	91	0.0	Valve 100% closed.....	y	
ZIONEW01	10/6/2015 16:03	64.1	26.8	1.1	8	74	0.0	Valve 100% closed.....	y	
ZIONEW01	11/9/2015 17:15	58.8	24.6	3.2	13.4	52	-0.1	Valve 100% closed.....	y	
ZIONEW01	12/15/2015 18:28	64.9	28.1	1	6	44	0.0	Valve 100% closed.....	y	
ZIONEW02	7/14/2015 16:13	66.6	32.6	0.7	0.1	78	0.0	Valve 100% closed.....	y	An adjusted standard request for pressure and oxygen was submitted to the USEPA for this location on 8/20/08, and approved on 10/3/08.
ZIONEW02	8/11/2015 17:45	67.2	32.1	0.5	0.2	81	0.0	Valve 100% closed.....	y	
ZIONEW02	9/14/2015 16:41	63.2	30.2	2.6	4	87	-0.1	Valve 100% closed.....	y	
ZIONEW02	10/6/2015 16:00	65.3	34	0.5	0.2	78	0.0	Valve 100% closed.....	y	
ZIONEW02	11/9/2015 17:11	7.5	4.3	19.3	68.9	51	0.0	Valve 100% closed.....	y	
ZIONEW02	12/15/2015 18:24	10.1	7.6	15.7	66.6	43	0.0	Valve 100% closed.....	y	
ZIOEW12A	7/14/2015 12:32	0	0	20.2	79.8	84	0	Valve 100% closed.....	y	An adjusted standard request for pressure and oxygen was approved by the USEPA on 4/4/08.
ZIOEW12A	8/11/2015 15:55	64.3	30.5	0.5	4.7	84	0.0	Valve 100% closed.....	y	
ZIOEW12A	9/14/2015 14:36	63.3	33.4	0.6	2.7	87	0.0	Valve 100% closed.....	y	
ZIOEW12A	10/6/2015 13:44	65.9	31.7	0.8	1.6	82	0.0	Valve 100% closed.....	y	
ZIOEW12A	11/9/2015 14:15	65	34.5	0.4	0.1	71	0.0	Valve 100% closed.....	y	
ZIOEW12A	12/15/2015 14:51	64.4	34.7	0.8	0.1	43	0.0	Valve 100% closed.....	y	
ZIONEW21	7/14/2015 11:57	51.8	27.6	1.6	19	80	0	Valve 100% closed.....	y	An adjusted standard request for pressure and oxygen was submitted to the USEPA for this location on 8/20/08, and approved on 10/3/08.
ZIONEW21	8/11/2015 15:01	67.6	30.9	0.3	1.2	84	0	Valve 100% closed.....	y	
ZIONEW21	9/14/2015 13:10	58.8	26.6	2.2	12.4	87	0	Valve 100% closed.....	y	
ZIONEW21	10/6/2015 12:35	31.6	17.9	7.5	43	81	0	Valve 100% closed.....	y	
ZIONEW21	11/9/2015 13:44	64.8	34	1	0.2	63	0	Valve 100% closed.....	y	
ZIONEW21	12/15/2015 14:14	64.3	34.8	0.7	0.2	46	0.4	Opened valve 1/2 or less.....	n	
ZIONEW21	12/15/2015 14:15	64.5	34.6	0.7	0.2	46	-0.1	Second readings.....	n	Adjusted standards letter for REW-1 was submitted to USEPA on August 27, 2008. This was approved by the USEPA on 10/22/08.
ZIONREW1	7/14/2015 18:02	17.5	9.7	13.6	59.2	71	-0.8	Valve 100% closed.....	y	
ZIONREW1	8/11/2015 19:03	23	12.5	11.9	52.6	75	0.0	Valve 100% closed.....	y	
ZIONREW1	9/14/2015 18:15	0.1	0	21	78.9	79	-1.4	Valve 100% closed.....	y	
ZIONREW1	10/6/2015 17:28	4.3	4.2	17.9	73.6	67	0.0	Valve 100% closed.....	y	
ZIONREW1	11/10/2015 17:32	35	20.7	0.2	36.1	50	0.0	Valve 100% closed.....	y	
ZIONREW1	12/15/2015 19:08	59.8	32.8	0.5	6.9	40	-0.1	Valve 100% closed.....	y	An adjusted standard request for pressure and oxygen was approved by the USEPA on 4/4/08.
ZIONCEW5	7/15/2015 16:23	0.1	0	20	79.9	84	0.0	Valve 100% closed.....	y	
ZIONCEW5	8/12/2015 17:06	0	0.4	20.4	79.2	75	0.0	Valve 100% closed.....	y	
ZIONCEW5	9/15/2015 15:23	0.3	0.6	19.4	79.7	95	0.0	Valve 100% closed.....	y	
ZIONCEW5	10/7/2015 16:37	0.3	0.8	20	78.9	67	0.0	Valve 100% closed.....	y	
ZIONCEW5	11/12/2015 13:14	0.3	0.7	21.4	77.6	48	-0.1	Valve 100% closed.....	y	
ZIONCEW5	12/16/2015 17:22	0.1	0.2	21.7	78	45	-0.4	Valve 100% closed.....	y	An adjusted standard request for pressure and oxygen was approved by the USEPA on 4/4/08.
ZIOCEW5E	7/15/2015 16:26	45.7	31.4	4.1	18.8	75	-12.5	No Change.....	n	
ZIOCEW5E	8/12/2015 17:02	43.8	29.5	4.7	22	77	-10.7	No Change.....	n	
ZIOCEW5E	9/15/2015 15:27	43.7	29.2	4.8	22.3	75	-0.3	No Change Hand Valve slightly open.....	n	
ZIOCEW5E	10/7/2015 16:41	59.3	39.9	0.7	0.1	62	-1.1	No Change.....	n	
ZIOCEW5E	11/12/2015 13:18	46	31.8	4.6	17.6	47	-14.3	No Change.....	n	
ZIOCEW5E	12/16/2015 17:25	59	40	0.8	0.2	43	-3.6	Opened valve 1/2 or less.....	n	An adjusted standard request for pressure and oxygen was approved by the USEPA on 4/4/08.
ZIOCEW5E	12/16/2015 17:26	59.1	40.8	0	0.1	43	-9.0	Second readings.....	n	